IN THE CLAIMS:

Please re-write the claims to read as follows:

1 1. (Previously Presented) A method for a file server to allocate a spare disk to replace a

2 failed disk in a network storage system comprising the steps of:

3 identifying a set of spare disks, the set of spare disks attached to the network stor-

4 age system;

5 choosing a best spare disk of the set of spare disks; and

6 claiming ownership of the best spare disk.

1 2. (Original) The method of claim 1 further comprising the steps of:

2 choosing, in response to a failure of the step of claiming ownership, a next best

3 spare disk of the spare disks available; and

4 claiming ownership of the next best spare disk.

1 3. (Original) The method of claim 2, wherein the step of claiming ownership of the best

2 spare disk further comprises the steps of:

3 setting a first ownership attribute to a file server-owned state; and

4 setting a second ownership attribute to a file server-owned state.

1   4.(Original) The method of claim 1 wherein the step of choosing the best spare disk fur-

2   ther comprises the steps of:

3   selecting one or more disks from the set of spare disks that satisfy one or more

4   rules;

5   sorting the one or more disks selected from the set of spare disks according to a

6   set of ordered policies to identify a highest-ranked disk;

7   choosing a highest-ranked disk as the best spare disk; and

8   choosing, in response to more than one of the one or more disks being highest-

9   ranked, one disk at random, from the more than one of the one or more disks that are

10   highest-ranked, as the best spare disk.

1   5. (Original) A method of verifying that a plurality of disks in a volume are optimally

2   configured comprising the steps of:

3   identifying all of the disks in the volume;

4   obtaining disk characteristics, respectfully, from all of the disks in the volume;

5   comparing the disk characteristics with a set of policies and characteristics of

6   spare disks; and

7   alerting an administrator if a more optimal configuration is possible.

1   6. (Original) The method of claim 5 further comprising the step of:

2   reconfiguring the disks into a more optimal configuration.

1 7.   (Currently Amended) A method of selecting a best spare disk for use by a file

2 server serving an array of disks from a set of spare disks comprising the steps of:

3   selecting one or more disks from the set of spare disks that satisfy one or more

4 rules;

5   sorting the one or more disks using a set of ordered policies;

6   if only one disk is highest-ranked, selecting the one disk that is highest-ranked as

7 the best spare disk; and

8   if a plurality of disks are highest-ranked, selecting one of the disks from the plu-

9 rality of disks that are highest ~~ranks~~ -ranked as the best spare disk.

1 8. (Original) A network storage system comprising:

2 one or more switches;

3 a plurality of spare disks operatively interconnected through at least one of the switches;

4 and

5   one or more file servers operatively interconnected to at least one of the switches,

6 each of the file servers including means for allocating one of the plurality of spare disks.

1 9.   (Original) The network storage system of claim 8, wherein the means for allocat-

2 ing one or more of the plurality of spare disks further comprises:

3 means for identifying the plurality of spare disks;

4 means for selecting a best spare disk from the plurality of spare disks; and

5 means for claiming ownership of the best spare disk.

1   10. (Original) The network storage system of claim 9, wherein the means for selecting a

2   best spare disk from the plurality of spare disks further comprises:

3   means for selecting a set of disks from the plurality of spare disks that satisfy one or

4   more rules;

5   means for sorting the set of disks according to a set of ordered policies; and

6   means for selecting a highest-ranked disk from the set of disks.

1   11. (Original) A computer-readable medium, including program instructions executing

2   on a file server, for allocating a replacement disk to the file server, the program instruc-

3   tions performing the steps of:

4   identifying a set of spare disks;

5   choosing a best spare disk of the set of spare disks; and

6   claiming ownership of the best spare disk.

1   12. (Original)The computer-readable medium of claim 11, wherein the step of choosing

2   the best spare disk further comprises the steps of:

3   selecting one or more disks from a set of spare disks that satisfy one or more

4   rules;

5   sorting the one or more disks selected from the set of spare disks according to a

6   set of ordered policies to identify a highest-ranked disk;

7   choosing a highest-ranked disk as the best spare disk; and

5

8   choosing, in response to more than one of the one or more disks being highest-

9   ranked, one disk at random, from the more than one of the one or more disks that are

10   highest-ranked, as the best spare disk.

1   13. (Previously Presented) A method for allocating a spare disk to replace a failed disk

2   in a network storage system, comprising:

3   maintaining a plurality of volumes in the network storage system, each volume

4   associated with a set of disk storage units;

5   maintaining a plurality of spare disks in the network storage system;

6   choosing a best spare disk of the plurality of spare disks to replace a failed disk,

7   the failed disk associated with any volume of the network storage system; and

8   replacing the failed disk with the best spare disk.

1   14. (Previously Presented)   The method as in claim 13, further comprising:

2   establishing at least one file server in the network storage system; and

3   performing the step of choosing a best spare disk by the at least one file server.

1   15. (Previously Presented) The method as in claim 13, further comprising:

2   establishing at least one file server in the network storage system; and

3   performing the step of replacing the failed disk with the best spare disk by the file

4   server.

1   16. (Previously Presented) The method as in claim 13, further comprising:

2   determining the best spare disk by selecting those disks from the plurality of spare

3   disks which meet at least one selected rule.

1   17. (Currently Amended) The method as in claim 13, further comprising:

2   sorting disks in accordance with policies, and assigning a score to each disk as a

3   result of the sorting; and

4   selecting the disk with a highest score as the best spare disk.

1   18. (Currently Amended) The method as in claim 13, further comprising:

2   determining those disks of the plurality of spare disks which meet at least one se-

3   lected rule to form a selected pool of disks;

4   sorting disks of the selected pool of disks in accordance with policies, and assign-

5   ing a score to each disk as a result of the sorting; and

6   selecting the disk with a highest score as the best spare disk.

1   19. (Currently Amended) The method as in claim 13, further comprising:

2   using a random selection process to select the best spare disk in the event that two

3   or more disks appear to be equally the best spare disk.

1   20. (Currently Amended) ~~The method as in claim 13, further~~ A method for allocating a

2   spare disk to replace a failed disk in a network storage system, comprising:

3   maintaining a plurality of volumes in the network storage system, each volume

4   associated with a set of disk storage units;

5   maintaining a plurality of spare disks in the network storage system;

6   attempting to determine the best spare disk by selecting those disks from the plu-

7   rality of spare disks which meet at least one rule;

8   replacing the failed disk with the best spare disk;

9   in the event that no spare disk meets the at least one rule, selecting a spare disk

10 which violates the at least one rule as a selected disk; and

11 notifying an administrator that the selected spare disk violates the rule.

1   21. (Previously Presented) A network storage system, comprising:

2   means for maintaining a plurality of volumes in the network storage system, each

3   volume associated with a set of disk storage units;

4   means for maintaining a plurality of spare disks in the network storage system;

5   means for choosing a best spare disk of the plurality of spare disks to replace a

6   failed disk, the failed disk associated with any volume of the network storage system; and

7   means for replacing the failed disk with the best spare disk.

1   22. (Previously Presented) The network storage system of claim 21, further comprising:

2   means for establishing at least one file server in the network storage system; and

3   means for performing the step of choosing a best spare disk by the at least one file

4   server.

1   23. (Currently Amended) The network storage system of claim 21, further comprising:

2   means for establishing at least one file server in the network storage system; and

3   means for performing the step of replacing the failed disk with the best spare disk

4   by the file server.

1   24. (Previously Presented) The network storage system of claim 21, further comprising:

2   means for determining the best spare disk by selecting those disks from the plural-

3   ity of spare disks which meet at least one selected rule.

1   25. (Currently Amended) The network storage system of claim 21, further comprising:

2   means for sorting disks in accordance with policies, and assigning a score to each

3   disk as a result of the sorting; and

4   means for selecting the disk with a highest score as the best spare disk.

1   26. (Currently Amended) The network storage system of claim 21, further comprising:

2   means for determining those disks of the plurality of spare disks which meet at

3   least one selected rule to form a selected pool of disks;

4   means for sorting disks of the selected pool of disks in accordance with policies,

5   and assigning a score to each disk as a result of the sorting; and

6   means for selecting the disk with a highest score as the best spare disk.

1 27. (Previously Presented) The network storage system of claim 21, further comprising:

2   means for using a random selection process to select the best spare disk in the

3 event that two or more disks appear to be equally the best spare disk.

1 28. (Currently Amended) ~~The network storage system of claim 21, further~~ A network

2 storage system, comprising:

3   means for maintaining a plurality of volumes in the network storage system, each

4 volume associated with a set of disk storage units;

5   means for maintaining a plurality of spare disks in the network storage system;

6   means for attempting to determine [the] a best spare disk by selecting those disks

7 from the plurality of spare disks which meet at least one rule;

8   means for replacing the failed disk with the best spare disk;

1   in the event that no spare disk meets the at least one rule, means for selecting a

2 spare disk which violates the at least one rule as a selected disk; and

3   means for notifying an administrator that the selected spare disk violates the rule.

1 29. (Previously Presented) A file server in a network storage system, comprising:

2   a storage adapter to connect to a plurality of disk storage units in the network

3 storage system;

4   an operating system to maintain a plurality of volumes, each volume associated

5 with a set of disk storage units, the set of disk storage units selected from the plurality of

6 disk storage units;

7   the operating system maintaining a plurality of spare disks units selected from the

8   plurality of disk storage units;

9   the operating system choosing a best spare disk of the plurality of spare disks to

10   replace a failed disk, the failed disk associated with any volume of the network storage

11   system; and

12   the operating system replacing the failed disk with the best spare disk.

1   30. (Previously Presented) The file server of claim 29, further comprising:

2   the operating system determining the best spare disk by selecting those disks from

3   the plurality of spare disks which meet at least one selected rule.

1   31. (Currently Amended) The file server system of claim 29, further comprising:

2   the operating system sorting disks in accordance with policies, and assigning a

3   score to each disk as a result of the sorting; and

4   the operating system selecting the disk with a highest score as the best spare disk.

1   32. (Previously Presented) The file server system of claim 29, further comprising:

2   the operating system determining those disks of the plurality of spare disks which

3   meet at least one selected rule to form a selected pool of disks;

4   the operating system sorting disks of the selected pool of disks in accordance with

5   policies, and assigning a score to each disk as a result of the sorting;

6   the operating system selecting the disk with a highest score as the best spare disk.

1   33. (Previously Presented) The file server of claim 29, further comprising:

2   the operating system using a random selection process to select the best spare disk

3   in the event that two or more disks appear to be equally the best spare disk.

1   34. (Currently Amended ~~The file server of claim 29, further~~ A file server in a network

2   storage system, comprising:

3   a storage adapter to connect to a plurality of disk storage units in the network

4   storage system;

5   an operating system to maintain a plurality of volumes, each volume associated

6   with a set of disk storage units, the set of disk storage units selected from the plurality of

7   disk storage units;

8   the operating system maintaining a plurality of spare disks units selected from the

9   plurality of disk storage units;

10   the operating system choosing a best spare disk of the plurality of spare disks to

11   replace a failed disk, the failed disk associated with any volume of the network storage

12   system;

13   the operating system attempting to determine [the] a best spare disk by selecting

14   those disks from the plurality of spare disks which meet at least one rule;

15   the operating system replacing the failed disk with the best spare disk;

16   in the event that no spare disk meets the at least one rule, the operating system se-

17   lecting a spare disk which violates the at least one rule as a selected disk; and

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18   the operating system notifying an administrator that the selected spare disk vio-

19   lates the rule.

1   35. A computer readable media, comprising:

2   said computer readable media containing instructions for execution on a processor

3   for the practice of a method for allocating a spare disk to replace a failed disk in a net-

4   work storage system, the method having the steps of,

5   maintaining a plurality of volumes in the network storage system, each volume

6   associated with a set of disk storage units;

7   maintaining a plurality of spare disks in the network storage system;

8   choosing a best spare disk of the plurality of spare disks to replace a failed disk,

9   the failed disk associated with any volume of the network storage system; and

10   replacing the failed disk with the best spare disk.

1   36. Electromagnetic signals propagating on a computer network, comprising:

2   said electromagnetic signals carrying instructions for execution on a processor for

3   the practice of a method for allocating a spare disk to replace a failed disk in a network

4   storage system, the method having the steps of,

5   maintaining a plurality of volumes in the network storage system, each volume

6   associated with a set of disk storage units;

7   maintaining a plurality of spare disks in the network storage system;

8   choosing a best spare disk of the plurality of spare disks to replace a failed disk,

9   the failed disk associated with any volume of the network storage system; and

10   replacing the failed disk with the best spare disk.